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## Citation

Kociol, Robb D., and Larry A. Allen. 2016. "Gradual Increases in Scheduled and Actual Early Follow-Up After Heart Failure Hospitalization." *Circulation: Heart Failure* 9 (1) (January): e002856. doi:10.1161/circheartfailure.115.002856.

## Published Version

10.1161/CIRCHEARTFAILURE.115.002856

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Published in final edited form as:

*Circ Heart Fail.* 2016 January ; 9(1): . doi:10.1161/CIRCHEARTFAILURE.115.002856.

## Gradual Increases in Scheduled and Actual Early Follow Up after Heart Failure Hospitalization: Two Steps Forward or One Step Forward?

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Since roll out of the Hospital Readmission Reduction Program (HRRP) in 2012, which penalizes hospitals up to 3% of their total Medicare payments if 30-day readmission rates for selected chronic conditions are in excess of the national average, heart failure (HF) readmission reduction has been center stage for hospital administrators, clinicians, and health-policy researchers.<sup>1</sup> Although the goal of improving care around the time of hospitalization is laudable, specific actions for reducing excess HF readmissions are not offered by the HRRP. Furthermore, the majority of high-quality randomized trials of varied HF transitional care interventions have failed to reduce readmission rates. Instead, hospitals have needed to rely on locally implemented solutions often employing care processes with face validity.<sup>2</sup>

A logical and commonly championed HF transitional care intervention is early ambulatory care follow up following hospital discharge. In 2009 Hernandez and colleagues reported an association between hospital-level early follow-up and decreased rates of 30-day readmissions.<sup>3</sup> Despite limitations of this retrospective observational study design and significant potential for residual confounding, these results were widely cited, reported in the lay press, and disseminated at scientific meetings. Early ambulatory follow-up after a HF hospital discharge was rapidly incorporated into hospital quality improvement policies, transitional care initiatives, and professional society guidelines.<sup>2, 4</sup>

In this issue of *Circulation: Heart Failure*, DeVore and colleagues examine temporal trends in scheduled early follow up (defined as follow-up with any provider within 7 days of discharge) over the 3 years since the original Hernandez *et al* paper was published.<sup>5</sup> Using the American Heart Association's (AHA) Get With The Guidelines – Heart Failure (GWTG-HF) registry, they examined rates of early follow-up from 2009–2012. Scheduled follow up at the time of hospital discharge increased from 51 to 65%, and patients at higher

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### Disclosures

Both Dr. Kociol and Dr. Allen have volunteered in various capacities with the AHA GWTG program. Dr. Kociol received past AHA grant support to perform research utilizing the AHA-GWTG registry. Dr. Kociol has received honoraria for speaking engagements regarding readmission reduction.

risk for post-discharge adverse events—those older, anemic, diabetic, or on warfarin—were more likely to be scheduled for early physician follow-up. In the subgroup analysis of Medicare fee-for-service beneficiaries who were linked to Medicare part B claims, of whom 59.2% were scheduled for early physician follow up, actual early physician follow-up went from 26.7% to 30.4%. There are a number of both encouraging and troubling issues raised by these findings.

DeVore *et al* demonstrate that high-quality, observational research can leverage large data sets to influence clinical practice. Now incorporated into clinical guidelines, individual hospital policies, transitional care models, and even transitional care management payments, scheduling early follow-up (although not necessarily as stringent as the 7-day cut-off) has become a standard of care. A 14% absolute increase in scheduling for ambulatory follow up when applied to the approximately 1 million U.S. HF hospitalizations annually represents a major change in clinical practice.

Furthermore, predictors of patients with scheduled early follow-up include demographics and comorbidities associated with higher risk, such as older age, diabetes, chronic kidney disease, and anticoagulant use. Despite the frequent tendency in medicine to observe a risk-treatment paradox, encouragingly in the case of follow up providers appear to be matching follow up scheduling to perceived risk.

However, these findings also demonstrate how implementation of care delivery interventions typically requires executing multiple steps to achieve the intended goal. While documented *scheduling* of appointments went up (the measure upon which hospitals are benchmarked in GWTG), the rate of *actual* early physician follow-up among this cohort was much lower. The rate of actual follow up was also lower than reported in the original Hernandez *et al* manuscript, where the median rate of hospital-level actual early follow-up from 2003–2006 was 38.3%.

The reasons for the gap between scheduled and actual follow up are not explained by the study, but anyone who has spent significant time arranging and providing clinic follow up can guess at some of the barriers. As this study points out predictors of patients with scheduled early follow-up include demographics and comorbidities associated with higher risk. Yet these may be the same patients with significant barriers to keeping outpatient appointments, especially early after discharge from a HF hospitalization as they may be weakened, homebound or lack the financial or caregiver support to get them to appointments. Hence this gap between scheduled and actual follow-up suggests the need for a better understanding of patient's resources, support, and home environment to identify barriers to outpatient provider appointments. Solutions may include appointment reminders, removing impediments such as copays and lack of transportation. Alternatively other follow-up methods such as phone calls or home visits, and benchmarking hospitals on actual (rather than scheduled) follow up may be preferable to simply scheduling early provider follow-up appointments at the time of discharge. If the goal is to have patients seen in early follow up, the data provided here suggest it is going to take more than writing an appointment on the discharge paperwork to get patients into the clinic within 7 days.

As we continue to work to make early follow up a reality, the lingering question is whether early discharge follow up, and in what form, actually improves outcomes for patients with HF. Intuitively it makes sense that patients with HF—at high risk for post-discharge morbidity and mortality by virtue of illness severity, comorbidities, and complex medicine regimens—would benefit from a clinic visit during the vulnerable period directly after discharge. However, increased contact with the medical system does not necessarily translate to less hospitalization. Recent telemonitoring trials have been resoundingly negative.<sup>6–8</sup> The DOT-HF study showed that thoracic impedance alerts markedly *increased* hospitalization.<sup>9</sup> Clinic visits could help catch errors in management ... or they could lead people to send patients to the emergency department who may otherwise have gotten by at home.

When one critically reviews the evidence for early follow-up, major questions remain. The Hernandez *et al* findings demonstrated a hospital-level association between early follow-up and reduced 30-day readmission rates among hospitals in the 3 higher quartiles of early follow-up versus the lowest quartile of early follow up. However, among hospitals in the three higher quartiles of early follow-up there was no significant difference in readmission rates. If early physician follow up was a key variable in reducing readmission rates, one would expect a dose-related step-wise reduction in the odds of readmission moving from lowest to high quartiles hospitals-level early follow-up. This raises the obvious question given the study's retrospective design of whether hospitals-level low rates of early physician follow-up is truly a causal variable associated with increased readmissions or rather a marker of other confounding variables or lack of a robust transitional care process. Indeed, another study looking at the relationship between early follow-up and readmission rates have not found such an association.<sup>10</sup> Perhaps one of the explanations as to why less than a third of Medicare beneficiaries receive 7-day follow up is that healthcare providers lack reasonable assurance that such efforts will have the intended effect. Ambulatory follow up, like readmission, is resource intensive. If hospital systems are going to invest the resources needed to actually get these patients to the clinic within a week of discharge, then we should have further prospective evidence that this intervention truly improves the targeted outcome of reducing 30-day readmissions.

Perhaps most disturbing is that with all of the resources going into early follow up, there are no ongoing large randomized trials to ascertain its true effectiveness. While the efforts of the GWTG investigators help us understand the landscape of HF transitional care and ambulatory follow up with insights into what drives current care patterns, its ability to tell us what we should be doing is limited. These efforts must be combined with randomized interventional trials of care delivery. Pragmatic clinical trials across health systems are technically feasible, but to date have been limited. That culture must change if the U.S. is to make significant strides on reducing HF readmission, specifically, and getting more value for its health care dollar, generally.

The authors of the present study convincingly demonstrate the ability of well-designed observational research to change clinical practice. This is particularly important in an era of decreased federal funding for randomized clinical trials and increased focus on patient centered outcomes. Yet, their findings also demonstrate the challenges of translating desired

interventions into clinical practice and the need to identify barriers and facilitators of transitional care delivery. As for most clinical questions, observational data will never provide a clear answer to what works best. It has been said, “Until you spread your wings, you’ll have no idea how far you can walk.” Since 2009 we have made important but incremental progress on transitional care and readmissions for heart failure. It seems unlikely that we will take flight until we commit to a series of high-quality randomized data that elucidate causal relationships between various transitional care interventions and patient-centered outcomes.

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